



PATENT APPLICATION

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q76266

Hiroyuki ASAOKO, et al.

Appln. No.: 10/608,625

Group Art Unit: 1645

Confirmation No.: 9860

Examiner: Unknown

Filed: June 30, 2003

For: MODIFIED REDUCTASE AND ITS GENE, AND USE THEREOF

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

| <u>Serial No.</u> | <u>Applicant's Name</u> | <u>Filing Date</u> |
|-------------------|-------------------------|--------------------|
| 10/608,533 | ASAOKO et al. | June 30, 2003 |
| 10/617,034 | ITOH et al. | July 11, 2003 |

1. European Patent Application No. 0 400 239 A1, published December 5, 1990, to Daito Koeki Kabushiki Kaisha.
2. European Patent Application No. 0 501 353 A2, published September 2, 1992, to Takeda Chemical Industries, Ltd.
3. European Patent Application No. 0 967 271 A1, published December 29, 1999, to Kaneka Corporation.

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4. European Patent Application No. 1 013 758 A2, published June 28, 2000, to Daicel Chemical Industries, Ltd.
5. European Patent Application No 1 201 647 A2, published May 2, 2002, to Sumitomo Chemical Co., Ltd.
6. European Patent Application No. 1 213 354 A2, published June 12, 2002, to Sumtiomo Chemical Co., Ltd.
7. ITOH et al., "Chiral alcohol production by NADH-dependent phenylacetaldehyde reductase coupled with *in situ* regeneration of NADA," *Eur. J. Biochem.* 269, 2002, pp. 2394-2402.
8. ITOH et al., "Chiral alcohol production by β -ketoester reductase from *Penicillium citrinum* coupled with regeneration system of NADPH", *Journal of Molecular Catalysis B Enzymatic*, Vol. 22, No. 3-4, June 2, 2003, pp. 247-248.
9. Japanese Patent Application No. 02-312593, published December 27, 1990, to Daito Corp., with English Abstract.
10. Japanese Patent No. 2532299, issued June 27, 1996, to Fuji Rebio Inc., with English Abstract.
11. KOMETANI et al., "Baker's Yeast Mediated Bioreduction. A New Procedure Using Ethanol as an Energ Source", *Chemistry Letters*, 1989, pp. 1465-1466.
12. SPILIOOTIS et al., "Enhanced Optical Purity of 3-Hydroxyesters Obtained by Baker's Yeast Reduction of 3-Ketoesters", *Tetrahedron Letters*, Vol. 31, No. 11, 1990, pp. 1615-1616.
13. U.S. Patent Application Publication No. 2003/0186400 A1, published October 2, 2003, to Asako et al.
14. U.S. Patent No. 4,455,373, issued June 19, 1984, to Higgins.
15. WEI et al., "Baker's yeast mediated mono-reduction of 1,3-cyclohexanediones bearing two identical C(2) substituents", *Tetrahedron: Asymmetry*, Vol. 12, 2001, pages 229-233.

One copy of each of the listed documents is submitted herewith.

The present Information Disclosure Statement is being filed: (1) No later than three months from the application's filing date; (2) Before the mailing date of the first Office Action

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INFORMATION DISCLOSURE STATEMENT

on the merits (whichever is later); or (3) Before the mailing date of the first Office Action after filing a request for continued examination (RCE) under §1.114, and therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,



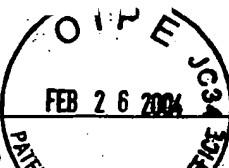
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

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| Sheet | 1 | of | 1 | Attorney Docket Number | Q76266 |
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Complete if Known

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| Application Number | 10/608,625 |
| Confirmation Number | 9860 |
| Filing Date | June 30, 2003 |
| First Named Inventor | Hiroyuki ASAOKO |
| Art Unit | 1645 |
| Examiner Name | Unknown |

U.S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Document Number | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document |
|--------------------|-----------------------|-----------------|--------------------------------------|--------------------------------|---|
| | | Number | Kind Code ² (if known) | | |
| | | US 2003/0186400 | A1 | 10-02-2003 | Asako et al. |
| | | US 4,455,373 | A | 06-19-1984 | Higgins |
| | | US | | | |
| | | US | | | |
| | | US | | | |

FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Translation ⁶ |
|--------------------|-----------------------|---------------------------|---------------------|--------------------------------------|--------------------------------|--|--------------------------|
| | | Country Code ³ | Number ⁴ | Kind Code ⁵ (if known) | | | |
| | | EP | 0 400 239 | A1 | 12-05-1990 | Daito Koeki Kabushiki Kaisha | |
| | | EP | 0 501 353 | A2 | 09-02-1992 | Takeda Chemical Industries, Ltd. | |
| | | EP | 0 967 271 | A1 | 12-29-1999 | Kaneka Corporation | |
| | | EP | 1 013 758 | A2 | 06-28-2000 | Daicel Chemical Industries, Ltd. | |
| | | EP | 1 201 647 | A2 | 05-02-2002 | Sumitomo Chemical Co., Ltd. | |
| | | EP | 1 213 354 | A2 | 06-12-2002 | Sumitomo Chemical Co., Ltd. | |
| | | JP | 02-312593 | A | 12-27-1990 | Daito Corp. | Abstract |
| | | JP | 2532299 | B2 | 06-27-1996 | Fuji Rebio | Abstract |
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NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published. | Translation ⁶ |
|--------------------|-----------------------|--|--------------------------|
| | | U.S. Patent Application No. 10/608,533, to ASAOKO et al., filed June 30, 2003 | |
| | | U.S. Patent Application No. 10/617,034, to ITOH et al., filed July 6, 2003 | |
| | | ITOH et al., "Chiral alcohol production by NADH-dependent phenylacetaldehyde reductase coupled with <i>in situ</i> regeneration of NADA," <i>Eur. J. Biochem.</i> 269, 2002, pp. 2394-2402 | |
| | | ITOH et al., "Chiral alcohol production by β -ketoester reductase from <i>Penicillium citrinum</i> coupled with regeneration system of NADPH", <i>Journal of Molecular Catalysis B Enzymatic</i> , Vol. 22, No. 3-4, June 2, 2003, pp. 247-248 | |
| | | KOMETANI et al., "Baker's Yeast Mediated Bioreduction. A New Procedure Using Ethanol as an Energy Source", <i>Chemistry Letters</i> , 1989, pp. 1465-1466 | |
| | | SPILIOTIS et al., "Enhanced Optical Purity of 3-Hydroxyesters Obtained by Baker's Yeast Reduction of 3-Ketoesters", <i>Tetrahedron Letters</i> , Vol. 31, No. 11, 1990, pp. 1615-1616 | |
| | | WEI et al., "Baker's yeast mediated mono-reduction of 1,3-cyclohexanediones bearing two identical C(2) substituents", <i>Tetrahedron: Asymmetry</i> , Vol. 12, 2001, pages 229-233 | |

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|--------------------|--|-----------------|
| Examiner Signature | | Date Considered |
|--------------------|--|-----------------|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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